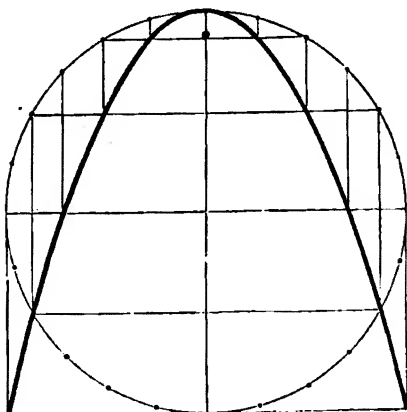


RETROGRESSIVE FINITE PARABOLA,

AS DERIVED FROM A CIRCLE.



Origin at Vertex.

R = Radius of circle.

$$y = R \sin \phi,$$

$$x = R \text{ vers } 2\phi,$$

$$= 2R \sin^2 \phi;$$

$$\therefore Rx = 2y^2.$$

Base = Axis.

Focal distance = one-eighth of R .

Parameter = half the Radius.

Discovered in 1835, and delineated by continuous motion in 1840, by

H. PERIGAL, Jun.

With Radius R draw a Circle, and its Diameter for axis of x . Take any arcs ϕ , from one extremity of the diameter, and bisect them. Draw from the arcs ϕ , lines ($y = R \sin \phi$) perpendicular,—and, from the half arcs, lines ($x = R \text{ versin } 2\phi = 2R \sin^2 \phi$) parallel,—to the diameter. These parallels and perpendiculars meet or intersect in the curve of a PARABOLA, whose *equation* is $Rx = 2y^2$; with Base = Axis, Parameter = half R , and distance of Focus from Vertex = one-eighth of R .

1835, 1840.

H. PERIGAL, Jun.